DIRECTIONS FOR TAKING FOREST PHOTOGRAPHS

GENERAL VIEWS

Make a practice of getting upon high points and taking successive pictures in different directions to form a panorama. In every case take horizontal pictures. The views should show :

1. The general topographical features of the country.
2. The general distribution of the forest.
3. Timber line.
4. Large openings made by fire and lumbering, including parks and meadows.
5. Agricultural land and improvements.

SPECIAL VIEWS

I. Forest Types.

Take general views in the forest to illustrate the distinguishing features of, and the variations within, each type. When possible include some familiar object, as a man, horse, ax, or caliper, to show relative size of trees. These views should show:

1. *The characteristic species at different ages.*—The pictures should include as many of the component species as possible, but must be taken near enough to distinguish the individual trees in the print. Groups of pure, even-aged stands at different ages should be shown.

2. *The habits of the trees in each type.*—Views should be selected which will show the average size, clear length, etc., and whether the trees are straight, have clear or knotty trunks, broad or narrow crowns, etc.

3. *Density.*—Choose views showing an average density, when possible, and, also, views of minimum and maximum density. Note the density in every case.

4. *Reproduction.*—Show young growth of the different species, and, where possible, include enough of the surrounding trees to show the conditions of reproduction. Choose views where the young growth will stand out against a light background, as snow or a light soil cover. Young growth against a dark background will be indistinct in the picture, unless lighter in color, as, for example, when covered with snow or when the sun is shining upon it.

5. *Other undergrowth*, as chaparral, ferns, etc., or entire lack of it.

6. *Sprouts.*—Show by near views sprouts of different species, including conifers, at different ages, after cutting and after fire.

7. *Near views of water courses, lakes, etc.*, showing the brush and timber about them, and also any eroding action of water flow.

8. *Near views of lands* washed by torrents, or overflowed.

II. The Single Tree.

Take upright photographs of each species singly to illustrate:

1. *The habit.*—The entire tree should be included, when possible, to show—

(a) The average and maximum size.

(b) Shape of trunk and crown.

(c) Close views of single trees or small groups growing under conditions unusual for the species; as on rock, when the species grows commonly in soil, etc.

The views should include young, middle-aged, and mature trees, and should be taken in characteristic situations and at various elevations throughout the range of the species. They should include trees in the open and in the forest, dominant and overtopped trees,

etc. (Forest-grown trees can be sought on recently-cut borders, deep burns where center of forest is exposed, etc.)

2. *Specimens suitable for*—

(a) First-class lumber.

(b) Second-class lumber.

(c) Firewood.

(d) Mine props.

(e) Ties.

(f) Piles, etc.

If not possible to thoroughly classify timber types, take views including type trees for all sizable timber, and indicate diameter, height, and length of clear bole.

3. *Ability to live in shade.*—Show young trees living in shade, or specimens killed by shade.

4. *Close views*, showing bark characteristics at different ages and in different situations, in or out of the forest.

5. *Root system*, characteristic of various species under different soil conditions. Roots upturned or otherwise uncovered.

6. *Abnormal growth*—cohesion of trunks, burls, etc.

III. Fire.

1. *Views of fire burning in grass, brush, or timber.*

2. *Effect of deep or shallow fire on:*

(a) Individual trees at different ages: Show trees and forests killed, felled, or scarred by fire.

(b) Character of the forest: Show how the growth of timber is affected, how the density is lessened, how the crowns become scrubby, etc.

(c) Composition of the forest: Show how forest types are changed, how less valuable species come up, how some valuable kinds can not grow after fire, etc.

(d) Soil: Show how the humus is destroyed and the protective power of the soil is impaired.

(e) Reproduction: Show how reproduction of certain species is hindered, and that of certain others helped by fire.

IV. Lumbering.

1. *Work in the woods and on the river:* Show characteristic methods of cutting, skidding, hauling, driving, etc.

2. *Photograph sawmills, yards, booms, etc.*

3. *Effect of lumbering on:*

(a) Character of the forest: Show whether the lumbering injures the trees which are left, how the density is lessened, etc.

(b) Composition of the forest: Show how the second growth is made up of different species, or how the proportion of those which compose the first growth is changed.

(c) Soil: Show whether the soil dries out, is washed away, or otherwise injured.

(d) Reproduction: Show young tree growth after lumbering; what shrubs or ferns, or other forest weeds come up.

(e) Waste caused by lumbering: (Record, in connection, diameter and length of waste timber.)

V. Effect of Grazing.

By sheep, cattle, horses, hogs, or other animals on:

1. *Young growth.*

2. *Soil.*—Show whether the soil is more easily washed on account of grazing; whether it dries out more readily, thereby causing death of trees; whether the growth of seedlings is hindered or stimulated, etc.

3. *Forage plants.*—Show whether they are injured through grazing.

VI. Natural Enemies.

Effect of wind, lightning, fungi, insects, high water, ice, snow, earthslides, rockslides, snowslides, etc., on individual trees and forests.

VII. Forest Management.

1. *Need of management.*

2. *Forest after skillful and conservative cutting.*—Show similar conditions before and after cutting, to illustrate advantage of forest management.

RULES FOR EXPOSURE

Select subject carefully.

Study the distribution of light on the subject, in order to secure as much contrast as possible by strong lights and shadows. Never expose toward the sun; the light should come from behind or from one side of the camera.

Set up camera level.

After focusing, fasten draw to prevent change of focus.

Select stop to suit time and subject.

Do not make snap shots in dense forest.

Use stops 4 to 16 for snap shots.

Use stop 128 when you can give plenty of time.

Do not hold camera in hand while making time exposure.

Cover plate or roll holder with focusing cloth during exposure; draw and replace slide squarely, otherwise film or plate may be light-struck.

See that film is evenly started on spool.

Keep film tightly rolled while loading or unloading.

Wind carefully to exact point for next exposure.

Occasionally wipe interior of camera with a damp cloth to remove dust; also dust unexposed glass plates with soft brush before loading plate-holder. Dust in camera and on glass plates frequently causes pin holes and spots in developed negative. Wipe lens with old linen or chamois skin.

Keep film and plates dry and cool and protected from light. When not in use protect camera from the sun.

Expose for darker parts of subject; better lighted portions will take care of themselves.

The power of the sun is greatest from eleven until two o'clock; for early morning or late afternoon views the exposure must be longer than at noon.

Landscapes are seen at a disadvantage under noonday sun, because in this position the sun casts no long shadows, which are desirable for contrast. If possible, avoid taking views when the sun is directly overhead. Views taken at this time appear flat and lack contrast.

When taking photographs in cloudy weather, increase exposure if clouds are gray or dark. Light or fleecy clouds permit quicker exposure than a clear day.

When making distant views, remember that an object two or three miles away requires only *one-tenth* the exposure that an object does when 50 or 100 feet from the camera. Red, yellow, orange, and green objects require longer exposure than white, gray, blue, and violet.

Altitude affects exposure; the higher the altitude the shorter the exposure required. Exposure need not be shortened for an elevation of less than 7,000 to 8,000 feet.

When making distant views, let sky occupy not more than one-fourth of picture.

In composing a picture to show relative size of tree or other object, the figure of a person (with back to camera) should show at one side.

Members of the same party should be careful not to take duplicate pictures of same subject.

Exposed films or plates should be returned as soon as possible to the *Service Photographer* for development.

SUGGESTIONS FOR FILLING OUT NOTES

Members of the Service who are photographing should have on hand constantly a sufficient supply of notebooks for the exposures to be made.

Extra numbers should not be added to the notebooks.

Each exposure is to be represented by one number in the notebook.

The twelve numbers in the notebook representing the exposures of one roll of films should be written on the film box before returning the latter to the office.

Care must be taken not to use the same number twice, as, for example, roll 1, 12304–12315; roll 2, 12315–12326, which should be, roll 1, 12304–12315; roll 2, 12316–12327.

In "species" blank give common and Latin name, if possible.

"Relative situation" refers to local position, as hillside, bank of stream, base of mountain, etc.

The perforated page following the notes for twelve exposures is for the use of the photographer in developing, and should contain a short, clear statement of the special object for which each exposure is made. This page should be torn out and sent in with the corresponding films or plates; it will be returned to the member after films are developed and show the results obtained.

SELECTION OF PRINTS FOR THE SERVICE COLLECTION

A selection of pictures taken will be placed in the Service collection, the immediate object of which is to illustrate and describe American forests, forest regions, forest trees, etc. In view of the fact that only valuable and perfect pictures will be retained for the collection, authors of photographs are requested to give careful attention to the following points:

1. The subject for which the picture is taken must be clearly defined. Badly light-struck views, superimposed views, or those out of focus or otherwise blurred, are to be discarded unless of striking or peculiar value.

2. Pictures with insufficient definition are to be discarded, except under the following conditions:

(a) Moderately clear pictures may be retained when no other photograph illustrates the subject; especially views difficult to duplicate, or of peculiar interest or value.

(b) Pictures which are otherwise clear, but with small light-struck areas or other damage near the margin, can be retained provided the imperfection can be trimmed off and still leave the subject sufficiently illustrated.

3. See that the numbers on the pictures correspond with those in the notebook. Corrections of these should be made in the notebook, not on the pictures.

4. Prints should be kept between stiff covers and under pressure to avoid curling.

5. Do not write on the backs of any of the photographs.

6. All prints should be returned to the Forest Service.

ACCOUNTING FOR PHOTOGRAPHIC MATERIAL

All photographic material (film, notebooks, etc.) distributed will be charged to the recipients, who will be required to render an account of all such material, whether used, unused, lost, or damaged, at the end of the season or investigation for which the material was obtained.

Films which become old on the recipient's hands must be returned to the Service Photographer immediately after expiring date.